

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Giovanni Frezza
Application No. : 09/997,995
Filed : November 30, 2001
For : METHOD FOR FORMING A PROTECTIVE PACKAGE FOR
ELECTRONIC CIRCUITS
Examiner : Ori Nadav
Art Unit : 2811
Docket No. : 856063.722
Date : March 10, 2008

Mail Stop Appeal Brief - Patents
Commissioner for Patents
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APPELLANT'S REPLY BRIEF

Commissioner for Patents:

This reply brief is in response to the Examiner's Answer dated January 10, 2008.

I. WRITTEN DESCRIPTION

The Appellant respectfully submits that the Examiner is trying to pigeon-hole the invention into completely separate embodiments in a manner that is not justified by the Appellant's disclosure. The Examiner is correct that Figure 2B shows an embodiment that includes a dyke 52 surrounding an elastic projection portion 51, and Figures 4-8 do not show such a dyke 52. However, the failure of Figures 4-8 to show such a dyke 52 does not mean that there is no written description supporting claim 33, which incorporates the "dyke" language of independent claim 31.

The specification discusses the use of a "dyke," such as the dyke 52 of Figure 2B, in plural embodiments of the invention. The specification, (page 3, line 22 - page 4, line 19; and

page 4, line 25 – page 5, line 13) discusses the embodiment shown in Figures 2A and 2B and its method of manufacture. Beginning at page 6, line 5, the specification discusses the device of Figure 5, which includes a plastic package 9 with tapered window 70, and its method of manufacture. The specification (page 6, lines 11-18) then discusses three possible ways to form the projecting portion 51 shown in Figure 5: 1) using volumetric dispensation (lines 11-13); 2) screen printing (lines 14-15); and 3) **using a dyke surrounding the projecting portion** (lines 16-18). There is nothing in the discussion on page 6, lines 11-18 that in any way limits those three possible ways of forming the projecting portion 51 to any single embodiment. Rather, beginning at line 5 of page 6, the language of each sentence indicates that it is one continuous discussion. In particular, line 5 states “Shown in Figure 5,” line 7 states “[i]n this case,” line 9 states “this covering layer 50,” line 11 states “such projecting portion,” line 14 states “this projecting portion,” and lines 16-19 state “the top surface of the sensor,” [the covering layer 50,” and “the projecting portion.” Perhaps even more telling, after “Figure 5” is introduced on line 5 of page 6, there is nothing prior to the discussion on lines 16-18 stating anything to the effect of “referring only to the embodiment of Figure 2B.”

It appears that the Examiner is confusing the “written description” requirement of Section 112 with particular embodiments shown in the figures. Nothing in Section 112 requires every single embodiment described in writing in the specification to be shown in a single figure. Instead, “written description” is satisfied if the actual writing of the specification describes an embodiment recited in the claim in question. Regarding claim 33, the discussion on page 6, lines 5-18 does reasonably convey to a person of ordinary skill in the art that the inventor had possession of an invention in which a dyke surrounding a projecting portion is combined with a plastic package having a tapered window, as recited in claim 33.¹

For the foregoing reasons, claim 33 is supported by a written description within the meaning of Section 112. Although the language of claims 40 and 42 is not identical to that of

¹ The Appellant notes that the Examiner is not correct when he states on page 9, lines 15-18, that the Appellant’s statement regarding “the embodiments of Figures 4-8, which all include windows ...” is not correct. In support of his argument, the Examiner notes that Figure 2B does not include windows defined by tapering walls, but Figure 2B is clearly not one of Figures 4-8, and thus, the Appellant’s statement was not incorrect.

claim 33, the written description support for claims 40 and 42 will be apparent in view of the above discussion.

II. ENABLEMENT

Much of the discussion above is also relevant to the enablement question. Once again, the Examiner is limiting his discussion of the enablement of claim 33 only to the specific embodiment shown in Figure 2B. However, the actual disclosure of the invention is not so limited. The discussion on page 6, lines 5-18 describes an embodiment in which a dyke surrounding a projecting portion is combined with a plastic package having a tapered window, as recited in claim 33. The detailed discussion on pages 3-8 describes numerous embodiments, some of which are shown in Figures 2A-8 and others of which are described without being shown.

Many of the embodiments described on pages 3-8 include a dyke surrounding a projecting portion and many include a plastic package with a tapered window, and one skilled in the art would have no trouble making the claimed embodiment that includes both a dyke surrounding a projecting portion and a plastic package with a tapered window. As admitted by the Examiner, the specification enables the embodiment recited in claim 31, which includes a dyke surrounding a projecting portion and a plastic protective package with a window. The enablement question with respect to dependent claim 33 is then whether one skilled in the art would understand how to add to form that window with tapering walls. A person of ordinary skill in the art would certainly know how to make the window of the plastic protective package have tapering walls. The specification itself explains that one could form such a window with tapering walls by using an upper half-mold 12 with a truncated conical lug 13 (see page 5, line 24 – page 6, line 2). Nothing in that discussion suggests that it is limited to any single embodiment. Instead, one skilled in the art would understand that any embodiment could have a window with tapered walls simply by using such a truncated conical lug 13.

For the foregoing reasons, claim 33 is supported by an enabling disclosure within the meaning of Section 112. Although the language of claims 40 and 42 is not identical to that of

claim 33, the enabling support for claims 40 and 42 will be apparent in view of the above discussion.

III. NOMURA AND GRIDER

1. Elastic Projecting Portion

The last paragraph on page 10 of the Appeal Brief points out that Grider teaches away from employing an elastic material for the top housing 13 of Grider by stating that the housing means provides a pressure barrier. The Examiner states on page 11, item 3, of the Examiner's Answer that it is unclear why using an elastic material for the top housing of Grider's device would not provide a pressure barrier.

One skilled in the art would know not to use an elastic material for the top housing of Grider's device because such an elastic material would not provide an accurate reading of the pressure that is being sensed by Grider's device. Grider explains at col. 1, lines 25-28 that "thick film circuit boards may contain components, such as a pressure sensor, which require a housing to isolate the pressure to be measured from the ambient pressure." If the housing were elastic, the internal pressure being measured would depend on the elasticity of the housing because the internal volume within the housing would change in response to pressure and temperature changes. For example, if a rigid housing were employed, such as the tin-plated steel housing 14 of Grider (see col. 1, lines 39-40), and the device is exposed to heat, the pressure within the housing would increase directly with the increase in temperature (generally in accordance with the ideal gas law $PV = nRT$). However, if an elastic housing were employed and the temperature were increased, the volume within the housing would also change, and thus, the pressure would not increase directly with the temperature. As a result, it would be quite difficult to get an accurate sensing of the pressure. In addition, such a hypothetical elastic housing would tend to change shape and reduce the effectiveness of any seals being used to isolate the internal pressure from the ambient pressure.

The Examiner appears to recognize that Grider does not teach the elastic projecting portion and does not point to any item of Grider or Nomura as teaching such an elastic

projecting portion.² The Examiner appears to be asserting that the plastic package 122 of Nomura would teach one skilled in the art that the top housing of Grider could be made of plastic and that such a plastic top housing satisfies the language of claim 19. The Appellant disagrees. Nomura does not suggest that the plastic package 122 is elastic. Accordingly, the hypothetical combination of Grider and Nomura still would not suggest the claimed invention.

2. Ring-shaped Projecting Portion Projecting into a Window

The Appellant respectfully submits that the Examiner is improperly asserting that the top housing 13 of Grider is both a protective package having a window and an elastic projecting portion projecting into the window, as recited in claim 19 (see page 5, lines 4-8; page 6, lines 6-10; page 13, lines 3-8). The top housing 13 cannot be both elements. First, it makes no sense to say that a single structure has a window and projects into the window. Second, the Examiner has not identified any window, and thus, has not met his burden of showing that the top housing 12 projects into such a window.

3. Projecting Portion Surrounded by a Dyke or Barrier

The Examiner still has not identified which portion of Grider or Nomura teaches or suggests an elastic projecting portion surrounded by a dyke or barrier. The Examiner simply asserts that Grider teaches such a dyke or barrier without pointing to any portion of Grider in support of that assertion (see page 5, lines 8-9). The Examiner asserts that there is an arbitrary portion of the Grider's top housing 13 that is a projecting portion, but there is no dyke or barrier surrounding the top housing. As a result, claims 22, 29, and 31-43 are not obvious in view of Grider and Nomura.

IV. YAMAWAKI AND NOMURA

The Appellant disagrees with the Examiner's assertions in Section 8 on pages 14-15 that one skilled in the art would be motivated to modify the optical device of Yamawaki to

² The Appellant notes that Nomura does show a gel-like protective member 132, but that would not teach or suggest the elastic ring-shaped projecting portion for the reasons discussed on page 11 of the Appeal Brief. The Examiner does not challenge that argument from the Appeal Brief.

obtain a pressure sensor as recited in claim 19. The Examiner indicates on page 15 that “an artisan would be motivated to modify Yamawaki’s optical device into a pressure sensor in order to use the device in an application which cannot support the tall protruding structure of Nomura.” That assertion is completely unsupported by anything in the prior art. Nothing in the prior art suggests that Nomura’s device is a “tall protruding structure” or that Yamawaki’s device is any shorter than that of Nomura.

In response to the Appellant’s argument that the proposed change of the Yamawaki device from an optical device to a pressure sensor device would render the Yamawaki device unsatisfactory for its intended portion, the Examiner asserts that the intended purpose would be a pressure device. Such an assertion is circular and clearly inconsistent with MPEP §2143.01(V) and *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984), which clearly state that, “If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” If the Examiner could simply invent a new intended purpose for Yamawaki’s device, without any support from Yamawaki, then there would clearly never be a proposed modification that would render the invention unsatisfactory for its intended purpose. The Examiner might as well assert that encasing Yamawaki’s device in a 500 pound lead enclosure would be motivated because it would be satisfactory for the new intended purpose of being an anchor for a boat.

The Examiner also mistakenly asserts that Yamawaki shows a projecting portion (part of material 9) surrounded by a dyke or barrier 3. Even a brief look at Figures 2f-2g would confirm that such an assertion is wrong. There is no portion of the plastic housing 9 that is surrounded by the wall 3. Instead, the opposite is true: The plastic housing 9 surrounds the wall 3. Accordingly, the invention of claims 22, 29, and 31-43 is nonobvious in view of Yamawaki and Nomura.

V. SUMMARY

For the foregoing reasons and the reasons in the Appeal Brief, all of the claims are enabled, supported by a proper written description, and nonobvious in view of the cited prior art. Allowance of all pending claims is respectfully requested.

Respectfully submitted,
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